

## EOS Production Sites Network Performance Report

This is a monthly summary of EOS network performance testing between production sites for September 2005 -- comparing the measured performance against the requirements.

### Highlights:

- Very stable performance
- Outstanding Issues:
  - ASF to NSIDC flow
  - JPL to LaRC TES flow
  - GSFC to JPL via PIP
- Significant changes in testing are indicated in Blue, Problems in Red

### Ratings:

#### Rating Categories:

Rating	Value	Criteria
<b>Excellent:</b>	<b>4</b>	<b>Total Kbps</b> > Requirement * 3
<b>Good:</b>	<b>3</b>	1.3 * Requirement <= <b>Total Kbps</b> < Requirement * 3
<b>Adequate:</b>	<b>2</b>	:Requirement < <b>Total Kbps</b> < Requirement * 1.3
<b>Almost Adequate:</b>	<b>1.5</b>	Requirement / 1.3 < <b>Total Kbps</b> < Requirement
<b>Low:</b>	<b>1</b>	Requirement / 3 < <b>Total Kbps</b> < Requirement / 1.3
<b>Bad:</b>	<b>0</b>	<b>Total Kbps</b> < Requirement / 3

Where Total Kbps = Integrated Kbps (where available)

Else = User Flow + iperf monthly average

### Ratings Changes:

#### Upgrades: ↑

JPL → RSS: Adequate → **Good**

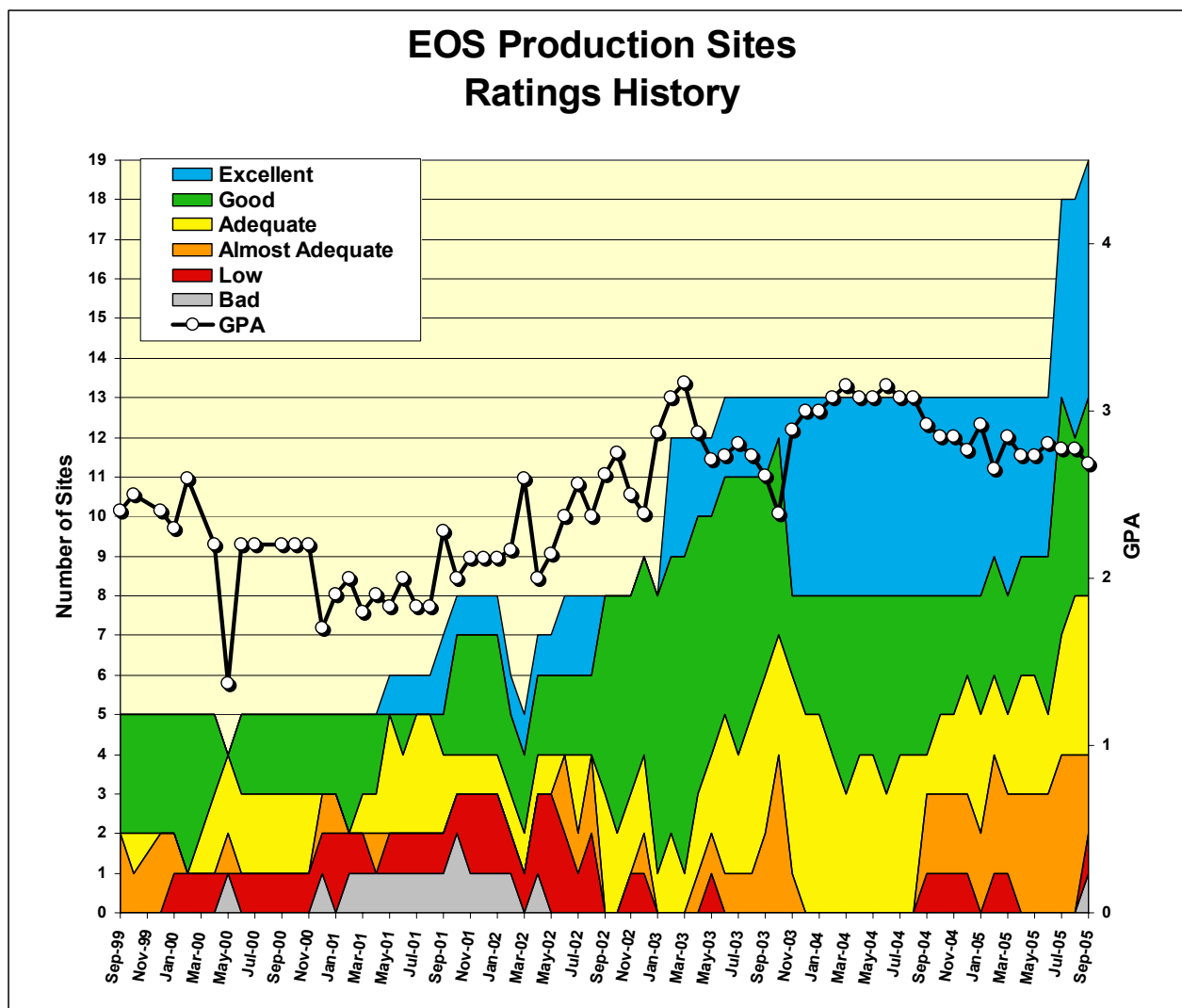
LaRC → JPL: Almost Adequate → **Adequate**

#### Downgrades: ↓

GSFC → JPL-AIRS: Almost Adequate → **Low**

#### Additions:

JPL-TES → LaRC: **BAD**

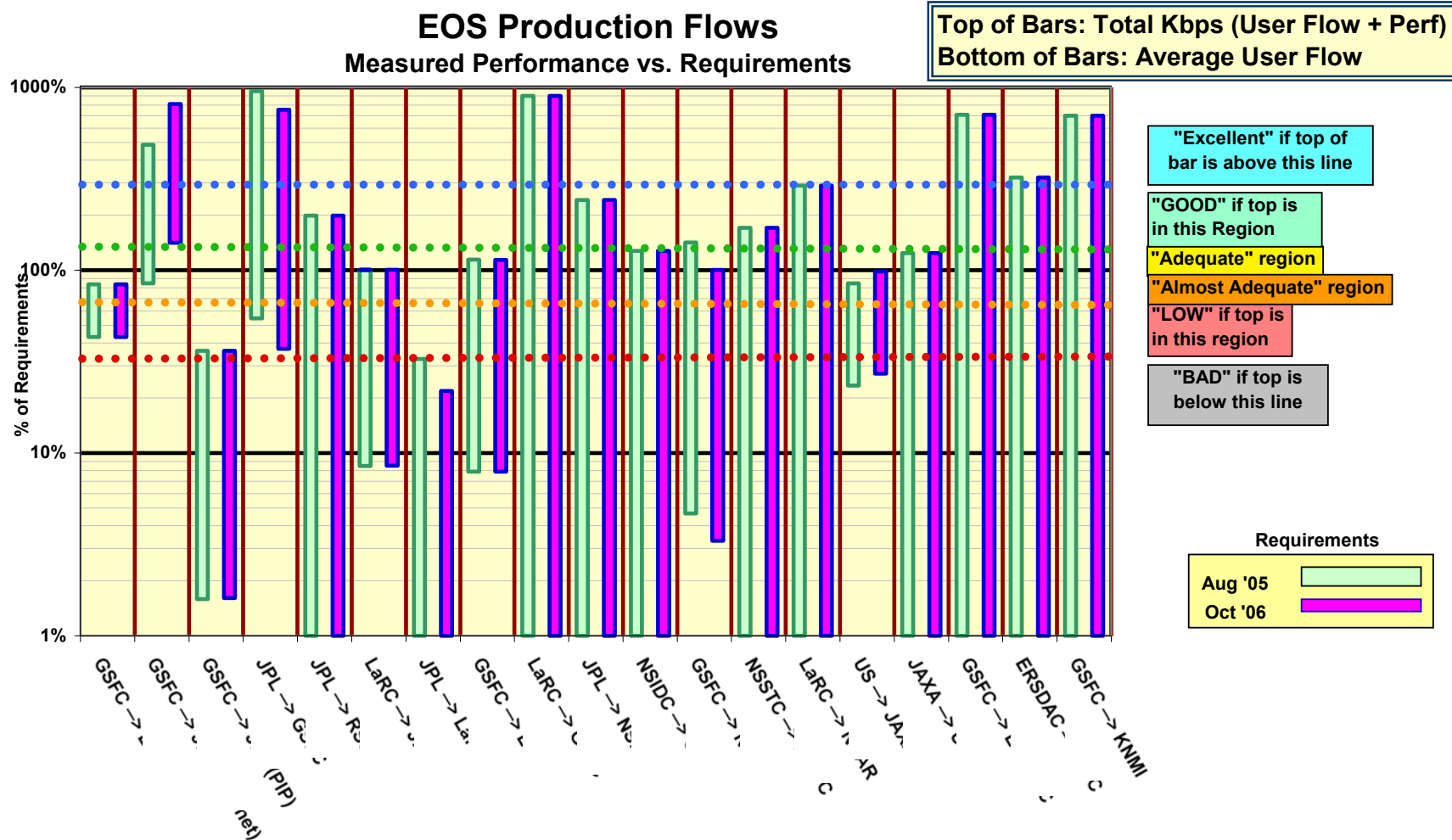


The chart above shows the number of sites in each classification since EMSnet testing started in September 1999. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements.

## Network Requirements vs. Measured Performance

September 2005		Requirements (kbps)		Testing							
Source → Destination	Team (s)	Current	Future	Source → Dest Nodes	Avg User Flow kbps	iperf Avg kbps	Total Avg kbps	Integrated kbps	Rating re Current Requirements		Rating re
		Sep-05	Oct-06						Sep-05	Prev	Oct-06
GSFC → ASF	QuikScat, Radarsat	n/a	n/a	GSFC-CSAFS → ASF	8	1305	1313	1305	n/a	n/a	n/a
ASF → JPL	QuikScat, Radarsat	n/a	n/a	ASF → JPL-SEAPAC	38	1316	1354		n/a	n/a	n/a
GSFC → NOAA	QuikScat	189	0	GSFC-CSAFS → NESDIS	n/a				n/a	n/a	n/a
GSFC → EDC	MODIS, LandSat	285361	285361	GSFC-PTH → EDC PTH	122990	229049	352039	238992	A A	A A	A A
GSFC → JPL (EMSnet)	ASTER, QuikScat, MLS, etc.	1272	762	GSFC-CSAFS → JPL-SEAPAC	1077	6158	7235	6175	Excellent	E	Excellent
GSFC → JPL (PIP)	AIRS, ISTs	15757	15757	GDAAC → JPL-AIRS	250	5705	5955	5705	LOW	A A	LOW
JPL → GSFC	AMSR-E, MISR, etc.	1155	1695	JPL-PODAAC → GDAAC	629	12145	12774		Excellent	E	Excellent
JPL → RSS	AMSR-E	2488	2488	JPL-PODAAC → RSS	n/a	4948	4948		GOOD	A	GOOD
LaRC → JPL	TES, MISR	39553	39553	LDAAC → JPL-TES	3367	39519	42886	39732	Adequate	A A	Adequate
JPL → LaRC	TES	35073	52626	JPL-TES → LDAAC (ftp)	n/a	11415	11415		BAD	n/a	BAD
GSFC → LaRC	CERES, MISR, MOPITT	58456	58594	GDAAC → LDAAC	4630	66073	70703	66794	Adequate	A	Adequate
LaRC → GSFC	MODIS, TES	3159	3160	LDAAC → GDAAC	6	50310	50316	50310	Excellent	E	Excellent
JPL → NSIDC	AMSR-E	1342	1342	JPL-PODAAC → NSIDC SIDADS	n/a	3246	3246		GOOD	G	GOOD
NSIDC → GSFC	MODIS, ICESAT, QuikScat	13326	13317	NSIDC DAAC → GDAAC	n/a	16974	16974		Adequate	A	Adequate
GSFC → NSIDC	MODIS, ICESAT, QuikScat	64118	90813	GSFC-PTH → NSIDC-PTH	2987	91041	94028	91122	GOOD	G	Adequate
NSSTC → NSIDC	MODIS, ICESAT, QuikScat	7497	7497	NSSTC → NSIDC DAAC	n/a	12800	12800		GOOD	G	GOOD
LaRC → NCAR	HIRDLS	5395	5395	LDAAC → NCAR	n/a	15636	15636		GOOD	G	GOOD
US → JAXA	QuikScat, TRMM, AMSR	1665	1431	GSFC-CSAFS → JAXA	389	1291	1680	1410	A A	A A	A A
JAXA → US	AMSR-E	1282	1282	JAXA → JPL-SEAPAC	0	1590	1590		Adequate	A	Adequate
GSFC → ERSDAC	ASTER	12450	12450	ENPL-PTH → ERSDAC	n/a	88191	88191		Excellent	E	Excellent
ERSDAC → EDC	ASTER	26832	26832	ERSDAC → EDC PTH	n/a	86266	86266		Excellent	E	Excellent
GSFC → KNMI	OMI	3282	3282	GSFC-MAX → OMI-PDR		22976	22976		Excellent	E	Excellent
Notes: Flow Requirements (from BAH) include TRMM, Terra, Aqua, Aura, ICESAT					Ratings Summary						
								Sep-05	Reg	Oct-06	
								Score	Prev	Score	
*Criteria:	Excellent	Total Kbps > Requirement * 3			Excellent			6	6	6	
	GOOD	1.3 * Requirement <= Total Kbps < Requirement			GOOD			5	4	4	
	Adequate	Requirement < Total Kbps < Requirement * 1.3			Adequate			4	4	5	
	Almost Adequate	Requirement / 1.3 < Total Kbps < Requirement			Almost Adequate			2	4	2	
	LOW	Requirement / 3 < Total Kbps < Requirement / 1			LOW			1	0	1	
	BAD	Total Kbps < Requirement / 3			BAD			1	0	1	
					Total			19	18	19	
					GPA			2.68	2.78	2.63	

This graph shows two bars for each source-destination pair. Each bar uses the same actual measured performance, but compares it to the requirements for two different times (Aug '05 and October '06). Thus as the requirements increase, the same measured performance will be lower in comparison.



Interpretation: The bottom of each bar is the average measured MRTG flow to a site. Thus the bottom of each bar indicates the relationship between the requirements and actual flows. Note that the requirements include a 50% contingency factor above what was specified by the projects, so a value of 66% would indicate that the project is flowing as much data as requested. The top of each bar represents the sum of the MRTG user flow plus the iperf measurement – it is this value which is used as the basis of the ratings

**1) ASF**Rating: **N/A**Web Page: [http://ensight.eos.nasa.gov/Networks/emsnet/ASF\\_EMS.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/ASF_EMS.shtml)

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-CSAFS → ASF	1.37	1.31	0.93	0.01	1.32	1.31
ASF → NESDIS	n/a	n/a	n/a			
ASF → NSIDC	0.16	0.15	0.12			
ASF → GSFC-CSAFS	1.40	1.39	0.55			
ASF → JPL-SEAPAC	1.37	1.32	0.74			

**Comments:** Thruput were stable this month to and from all destinations – except that testing to NOAA stopped since the NOAA host was down. The 1.3 to 1.4 mbps outbound total is as expected for a single T1 (1.54 mbps) circuit, as is the 1.3 mbps inbound. **The performance to NSIDC is still low since the NSIDC switch from EMSnet to PIP in February** (previously performance was over 1 mbps -- similar to the other destinations).

Since the requirement from ADEOS has been deleted, the remaining ASF requirements are very low, and are mostly based on estimated ECS interDAAC queries, not production flows. These flow estimates are not considered reliable enough to use as a basis for testing, so the rating is "N/A".

**2) EDC:**Rating: Continued **Almost Adequate**Web Page: <http://ensight.eos.nasa.gov/Networks/emsnet/EDC.shtml>

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-PTH → EDC PTH	243.0	229.0	191.8	123.0	352.0	239.0
GSFC-DAAC → EDC LPDAAC	226.7	196.8	108.6			
ERSDAC → EDC	86.9	86.3	22.3	(via APAN / Abilene / vBNS+)		
EDC DAAC → GSFC DAAC	128.1	113.4	84.7			
EDC PTH → GSFC PTH	334.6	275.1	172.4			

Requirements:

Source → Dest	Date	mbps	Rating
GSFC → EDC	FY '05	285.4	<b>Almost Adequate</b>
ERSDAC → EDC	FY '05	26.8	<b>Excellent</b>

**Comments:**

The rating is based on testing between from GSFC PTH to EDC PTH. The PTH hosts are outside the EDC firewalls, and therefore have higher thuput.

The rating is based on the "Integrated" measurement, and as usual is lower than the sum of the MRTG and iperf. The user flow this month had only a small contribution to the integrated measurement. This 237 mbps value remains below the requirement, but by less than 30%, so the rating continues to be "Almost Adequate".

The results from ERSDAC to EDC-PTH (in support of the ERSDAC to EDC ASTER flow, replacing tapes) improved to their present values in April (median was 5.6 mbps in March), after an optical jumper was replaced in the Abilene to NGIX-E connection. This median thuput is more than 3 times the 26.8 mbps requirement, resulting in an "Excellent" rating.

### 3) JPL:

#### 3.1) JPL ↔ GSFC

Ratings: JPL → GSFC: Continued **Excellent**

GSFC → JPL: PIP: ↓ Almost Adequate → **Low**

EMSnet: Continued **Excellent**

Web Pages:

[http://ensight.eos.nasa.gov/Networks/emsnet/JPL\\_SEAPAC.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/JPL_SEAPAC.shtml)

[http://ensight.eos.nasa.gov/Networks/emsnet/JPL\\_PODAAC.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/JPL_PODAAC.shtml)

[http://ensight.eos.nasa.gov/Missions/aqua/JPL\\_AIRS.shtml](http://ensight.eos.nasa.gov/Missions/aqua/JPL_AIRS.shtml)

Test Results:

Source → Dest	NET	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
		Best	Median	Worst			
GSFC-CSAFS → JPL-SEAPAC	EMS	7.7	6.2	0.5	1.1	7.2	6.2
GSFC-MODIS → JPL-PODAAC	EMS	4.8	3.9	0.7	1.1	5.0	4.1
JPL-PODAAC → GSFC DAAC	EMS	12.3	12.1	3.5	0.6	12.8	
GSFC-DAAC → JPL-AIRS	PIP	20.3	5.7	1.1			
GSFC-PTH → JPL-AIRS	PIP	18.8	4.9	0.6			
GSFC-CNE → JPL-AIRS	SIP	20.0	19.4	14.2			

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → JPL via EMSnet	Aug '05	1.27	Excellent
GSFC → JPL via PIP	Aug '05	15.76	Low
JPL → GSFC combined	Aug '05	1.16	Excellent

#### Comments:

**GSFC → JPL:** The GSFC to JPL flows are still divided between EMSnet (to PODAAC, SEAPAC, JAXA, and ASF destinations) and PIP (AIRS) – the requirements are therefore correspondingly divided.

**EMSNET:** The 1.27 mbps requirement is derived from version 1.4 of the EOS Networks Handbook, and applies to the EMSnet flows only. The performance on this circuit improved from 6 mbps peaks to 8 mbps in late March with a NISN PVC change – it remains well above the requirement; the rating remains "Excellent". The CSFAS to SEAPAC "integrated" data is (like most other sites) just a bit higher than the iperf results alone, and lower than the sum of the median iperf and average MRTG. This again indicates that adding a small average user flow to the median iperf overstates the true situation.

**PIP:** The PIP flows include QA data from GDAAC to JPL-AIRS, ISTs for several missions (but the JAXA AMSR-E ISTs flow to JPL via EMSnet), and science user flow estimates, totaling 15.76 mbps. The throughput via PIP appears bimodal, usually either about 1.5 mbps or 20 mbps – quite similar from the GDAAC and GSFC-PTH nodes. It is much more stable via SIP (usually 18-20 mbps). The median and worst from GDAAC dropped this month – the median was 13.5 mbps last month. It is now well below the requirement, resulting in an "Low" rating. From CNE, the median throughput is above the requirement, and would be rated "Adequate".

**JPL → GSFC:** The requirement from JPL to GSFC includes flows from JAXA and ASF which go via JPL, and includes GSFC and NOAA destinations. Since many of these flows were related to ADEOS, this requirement dropped substantially with the removal of ADEOS. The requirement was revised last month; the new requirement was taken from version 1.4 of the EOS Networks Handbook, and is now 1.16 mbps (was 0.63 mbps). Since the combined 12.1 mbps throughput is more than 3 times that, the rating remains "Excellent".

**3.2) JPL ↔ LaRC**Ratings: JPL → LaRC: **BAD** (New)LaRC → JPL: **↑Almost Adequate → Adequate**

Web Pages:

[http://ensight.eos.nasa.gov/Networks/emsnet/JPL\\_TES.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/JPL_TES.shtml)[http://ensight.eos.nasa.gov/Missions/terra/JPL\\_MISR.shtml](http://ensight.eos.nasa.gov/Missions/terra/JPL_MISR.shtml)

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
LaRC DAAC → JPL-TES	40.3	39.5	23.2	3.4	42.9	39.7
LaRC DAAC → JPL-MISR	40.9	40.1	23.6			
LaRC PTH → JPL-PTH	N/A	N/A	N/A			
JPL-TES → LaRC DAAC (ftp)	12.5	11.4	1.7			

Requirements:

Source → Dest	Date	Mbps	Rating
LaRC DAAC → JPL-TES	Aug '05	29.8	Adequate
LaRC DAAC → JPL-MISR	Aug '05	18.5	Good
LaRC DAAC → JPL-Combined	Aug '05	39.5	Adequate
JPL → LaRC	Aug '05	35.1	BAD

**Comments:**

**LDAAC → JPL:** Performance has been stable since this flow was switched to NISN PIP on 10 Feb; MRTG data became unavailable at that time -- the passive "flows" data is now being used instead. The LaRC-PTH to JPL-PTH testing also was disabled by this transition, since the LaRC-PTH node switched to PIP, while JPL-PTH remained on EMSnet, and thus did not have connectivity. A review of the requirements reduced the TES requirement slightly (was 30.6 mbps last month). But the flow was just below adequate previously -- with the reduced requirement it improves to "Adequate".

**JPL → LDAAC:** This requirement was identified in version 1.4 of the EOS Networks Handbook, and is for TES products produced at the TES SIPS at JPL, being returned to LaRC for archiving. Testing of this capability began via ftp pulls at LDAAC from TES. While this is known to be window limited, the measured throughput is below 1/3 of the requirement, resulting in a "BAD" rating. It is planned to begin iperf testing soon.

**3.3) ERSDAC → JPL ASTER IST**

Rating: n/a

Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER-IST	87.9	79.0	19.5

**Comments:**

**ERSDAC → JPL-ASTER-IST:** This test was initiated in March, via APAN replacing the EBnet circuit. The typical 76 mbps must be well in excess of the requirements (IST requirements are generally 311 kbps).

**4) NSIDC:**

Ratings: GSFC → NSIDC: Continued **Good**  
 NSIDC → GSFC: Continued **Adequate**

Web Pages: [http://ensight.eos.nasa.gov/Networks/emsnet/NSIDC\\_EMS.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/NSIDC_EMS.shtml)  
[http://ensight.eos.nasa.gov/Missions/aqua/NSIDC\\_u.shtml](http://ensight.eos.nasa.gov/Missions/aqua/NSIDC_u.shtml)

**GSFC ↔ NSIDC Test Results:**

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-DAAC → NSIDC-DAAC	91.0	90.4	56.1	3.0	93.4	90.4
GSFC-PTH → NSIDC-DAAC	91.4	91.0	69.8			
NSIDC DAAC → GSFC-DAAC	17.0	17.0	15.2			

**Requirements:**

Source → Dest	Date	Mbps	Rating
GSFC → NSIDC	Aug '05	64.1	<b>Good</b>
NSIDC → GSFC	Dec '04	13.3	<b>Adequate</b>

**Comments:**

**GSFC → NSIDC:** This flow was switched from EMSnet to NISN PIP on 8 February -- as a result of this switch, the MRTG data became unavailable -- the passive "flows" data is now being used instead. The rating is based on testing from GDAAC to the NSIDC DAAC. The iperf and integrated thruput values were stable this month. The requirement, however, varies from month to month, based on planned ICESAT reprocessing. This month the reprocessing **IS NOT** included. Thus the thruput remains 30% above the requirement, and the rating remains "Good"

**NSIDC → GSFC:** Performance from NSIDC to GSFC was stable this month, and the median remains slightly below 30% above the requirement, so the rating remains "Adequate".

**Other Testing:**

Source → Dest	Medians of daily tests (mbps)			Requirement	Rating
	Best	Median	Worst		
JPL → NSIDC-SIDADS	3.8	3.2	1.9	1.34	<b>Good</b>
GSFC-ISIPS → NSIDC (iperf)	90.4	90.0	42.3		
GSFC-ISIPS → NSIDC (ftp)	24.0	23.9	21.9		
NSIDC → GSFC-ISIPS (iperf)	16.1	15.7	14.9		
<b>NSSTC → NSIDC DAAC</b>	12.9	12.8	0.4	7.5	<b>Good</b>
<b>ASF → NSIDC</b>	0.16	0.15	0.12	0.73	<b>Bad</b>

**Comments:**

**JPL → NSIDC-SIDADS:** This flow switched from EMSnet to PIP on Feb 8, and thruput dropped from 6.1 mbps previously. Thruput remains below 3 x the requirement, so the rating remains "Good".

**GSFC-ISIPS ↔ NSIDC:** Performance from ISIPS to NSIDC was fixed on 8 February, after having problems since July '04. Performance is at nominal levels for the circuit capacity. Testing from NSIDC to ISIPS is stable and gets thruput similar to NSIDC to GDAAC.

**NSSTC → NSIDC:** NSSTC (Huntsville, AL) sends AMSR-E data to NSIDC. Thruput is above 30 % over the requirement, so is rated "Good"

**ASF → NSIDC:** The median thruput dropped with the NSIDC switch to PIP in February (was 1.4 mbps prior to that). It remains at less than 30% of the requirement, so the rating remains "Bad".



**5) GSFC ↔ LaRC:**

Ratings: LDAAC → GDAAC: Continued **Excellent**  
 GSFC → LARC: Continued **Adequate**

Web Page: <http://ensight.eos.nasa.gov/Networks/emsnet/LARC.shtml>

Test Results:

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GDAAC → LDAAC	77.3	66.1	23.6	4.6	70.7	66.8
GSFC-NISN → LaTIS	78.1	67.1	16.1			
GSFC-PTH → LaRC-PTH	78.1	68.9	24.5			
LDAAC → GDAAC	51.1	50.3	30.1	0.006	50.3	50.3

Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → LARC (Combined)	FY '05	58.5	<b>Adequate</b>
GDAAC → LaRC ECS	FY '05	17.8	<b>Excellent</b>
GSFC → LATIS	FY '05	40.7	<b>Good</b>
LDAAC → GDAAC	FY '05	3.2	<b>Excellent</b>

**Comments:**

**GSFC → LaRC:** The GSFC→ LaRC ECS DAAC flow was switched from EMSnet to NISN PIP on 8 February (GSFC → LaTIS had been flowing on PIP since November). The combined 58.5 mbps requirement had been split as indicated above when the flows were on separate circuits, but is now treated as a single requirement as they are now both on PIP. So the rating is now based on the GDAAC to LaRC ECS DAAC thruput, compared to the combined requirement. MRTG and LaTIS user flow data are also no longer available (but the ECS user flow data was restored in March, and is used for the “User Flow” above).

So the GSFC→ LaRC ECS DAAC thruput is now above the combined requirement, but by less than 30%, so the combined rating remains “Adequate”.

**LaRC → GSFC:** Performance remained stable with the switch to PIP. The requirement jumped from 6.8 mbps to 31.7 mbps in Oct '03, to incorporate the backhaul of all LaRC science outflow via GSFC. However, most of the LaRC outflow was switched to MAX via SIP in April, improving the performance, so the backhaul portion of the requirement has now been removed (The requirement was 32 mbps including backhaul).

The thruput remains more than 3 x this requirement, so the rating continues as “Excellent”.

**6) NOAA NESDIS:**

Rating: n/a

Web Page: [http://ensight.eos.nasa.gov/Networks/emsnet/NOAA\\_NESDIS.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/NOAA_NESDIS.shtml)

The NOAA Test host was removed on 23 June; a replacement has been implemented in October. Note: All flows have now been moved to use the MAX connection.

Requirements:

Source → Dest	FY	Mbps	Rating
GSFC-CSAFS → NESDIS	'05	0.19	n/a

**Comments:** The dominant flow to NOAA is Quikscat data, from GSFC CSAFS.

**7) US ↔ JAXA:**

Ratings: JAXA → US: Continued **Adequate**  
 US → JAXA: Continued **Almost Adequate**

Web Pages [http://ensight.eos.nasa.gov/Networks/emsnet/JAXA\\_EOC.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/JAXA_EOC.shtml)  
[http://ensight.eos.nasa.gov/Networks/emsnet/JPL\\_SEAPAC.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/JPL_SEAPAC.shtml)  
[http://ensight.eos.nasa.gov/Networks/emsnet/GSFC\\_SAFS.shtml](http://ensight.eos.nasa.gov/Networks/emsnet/GSFC_SAFS.shtml)

**Test Results:**

Source → Dest	Medians of daily tests (mbps)			User Flow	TOTAL	Integrated
	Best	Median	Worst			
GSFC-CSAFS → JAXA-EOC	1.52	1.29	0.78	0.39	1.68	1.41
<a href="#">JAXA-EOC → JPL-SEAPAC</a>	<a href="#">1.60</a>	<a href="#">1.59</a>	<a href="#">0.75</a>			
JAXA-EOC → GSFC-DAAC	1.46	1.43	0.64			

**Requirements**

Source → Dest	Date	mbps	Rating
GSFC → JAXA	FY '05	1.67	<b>Almost Adequate</b>
JAXA → US	FY '04, '05	1.28	<b>Adequate</b>

**Comments:**

**US → JAXA:** The requirements above were reduced in November '03, due to the removal of ADEOS flows. They have again been reduced in January '05 (were 2 mbps previously).

Performance has been stable since it recovered in January, below this requirement, but by less than 30%, so the rating remains "Almost Adequate".

Note: The requirement still includes 4 ISTs at JAXA for AMSR-E. Each IST has a requirement for 311 kbps, for a total of 1244 kbps. It could be questioned whether JAXA intends to operate all four of the ISTs simultaneously, or whether some ISTs are backups, in which case the network requirements would be reduced to a lower value.

**JAXA → US:** Performance remained consistent with the reduced ATM PVC. The requirement was reduced in November '03 due to the removal of ADEOS requirements, and increased again in Version 1.4 of the EOS Networks Handbook.

This month testing from JAXA to JPL has been restored, with thruput slightly higher than to GSFC (due to lower RTT eliminating the window size limitation seen to GSFC). The thruput is above the new increased requirements and remains rated "Adequate".

**8) ERSDAC ↔ US:**Rating: Continued **Excellent**Web Page : <http://ensight.eos.nasa.gov/Networks/emsnet/ERSDAC.shtml>

## Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
GDAAC → ERSDAC	20.5	15.0	8.3
GSFC ENPL (Fast Ethernet) → ERSDAC	89.3	88.2	35.5

## Requirements:

Source → Dest	FY	Kbps	Rating
GSFC → ERSDAC	'03 - '05	12.5	<b>Excellent</b>

**Comments:** Dataflow from GDAAC to ERSDAC was switched to APAN in late February, and the performance above is via that route. MRTG and user flow data are no longer available due to this change.

The thrupt from GDAAC is apparently limited by packet loss at the GigE to FastE switch at Tokyo-XP. The GigE GDAAC source does not see any bottlenecks until this switch (The Abilene and APAN backbones are 10 Gbps), and thus exceeds capacity of the switch's FastE output circuit. But the FastE connected GSFC-ENPL node is limited to 100 mbps by its own interface, so does not suffer performance degrading packet loss – its performance is much higher. Note: EDOS is also FastE connected, and gets the higher performance levels.

The requirement now includes the level 0 flows which used to be sent by tapes. The thrupt is still more than 3 x this increased requirement, so the rating remains "Excellent".

**Other Testing:**

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER IST	87.9	79.0	19.5
ERSDAC → EDC	86.9	86.3	22.3

## Requirements:

Source → Dest	Date	mbps	Rating
ERSDAC → EDC	FY '05	26.8	<b>Excellent</b>

**Comments:**

**ERSDAC → EDC:** The results from this test (in support of the ERSDAC to EDC ASTER flow, replacing tapes) were stable this month. Thrupt improved to these present values in April (median was 5.6 mbps in March), after an optical jumper was replaced in the Abilene to NGIX-E connection. The median thrupt is more than 3 x the requirement, so the rating is "Excellent"

**ERSDAC → JPL-ASTER-IST:** This test was initiated in March, via APAN replacing the EBnet circuit. The results are much higher than previously via the 1 mbps ATM circuit, and should be considered "Excellent" (no requirement is specified at this time – but other IST requirements are 311 kbps)

## 9) SIPS Sites:

Web Pages <http://ensight.eos.nasa.gov/Missions/terra/NCAR.shtml>  
<http://ensight.eos.nasa.gov/Missions/aqua/RSS.shtml>  
[http://ensight.eos.nasa.gov/Missions/aura/KNMI\\_OMIPDR.shtml](http://ensight.eos.nasa.gov/Missions/aura/KNMI_OMIPDR.shtml)

### Test Results:

Source → Dest	Medians of daily tests (mbps)			Requirement	Rating
	Best	Median	Worst		
LaRC → NCAR	18.2	15.6	8.8	5.4	Good
GDAAC → NCAR	93.1	93.0	93.0	5.1	Excellent
JPL → RSS	5.6	4.9	2.1	2.4	↑ Good
GSFC → KNMI	23.1	23.0	22.6	3.3	Excellent

**Comments:** These sites were previously reported in the QA/SCF report. But have been moved to this report since as SIPS, they are part of the EOS data production process. Note that they are not connected by EMSnet.

**NCAR:** NCAR (Boulder, CO) is a SIPS for MOPITT (Terra, from LaRC), and has MOPITT and HIRDLS QA (Aura, from GSFC) requirements. Thruput from LaRC (via NISN to MAX to Abilene) is just below 3 x the requirement, so the rating is "Good". From GSFC median thruput is extremely steady at over 3 x the requirement, so that rating is "Excellent".

**RSS:** RSS (Santa Rosa, CA) is a SIPS for AMSR-E, receiving data from JPL, and sending its results to NSSTC (Huntsville, AL). The NISN dedicated circuit from JPL to RSS was upgraded on August 17 from 2 T1s (3 mbps) to 4 T1s (6 mbps) to accommodate the larger RSS to GHCC flow. Thruput improved to the above values at that time – it is now more that 30% above the requirement, thus improving the rating from "Adequate" to "Good".

Note that with the present configuration, the RSS to NSSTC performance cannot be tested.

**KNMI:** KNMI (DeBilt, Netherlands) is a SIPS and QA site for OMI (Aura). The route from GSFC is via MAX to Abilene, peering in NY with Surfnets 10Gbps circuit to Amsterdam. Thruput to a test node at KNMI is limited only by a Fast Ethernet connection at KNMI, and get a very steady 92 mbps! The results above are to the OMI PDR server, protected by a firewall, and are quite a bit lower. Thruput is still well above 3 x the requirement, rating "Excellent".